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|-------------------------------|------------------------|---------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/783,798 | HILL ET AL. | |
| | Examiner | Art Unit | |
| | Chun Cao | 2115 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 2/28/05.
2. ☒ The allowed claim(s) is/are 1,3-7,13-18 and 20-23.
3. ☒ The drawings filed on 14 February 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

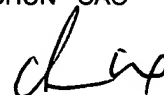
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>3/18/05</u>. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|---|---|

CHUN CAO



DETAILED ACTION

1. This action is in response to amendment received on 2/28/05. Claims 1, 3-7, 13-18 and 20-23 are pending.

Allowable Subject Matter

2. Claims 1, 3-7, 13-18 and 20-23 are allowed.

EXAMINER'S AMENDMENT

3. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.
4. The application has been amended as follows:

In the Claims:

Please amends claims 1, 3, 4, 7, 13, 17, 18, 20 and 21 as following:

Claim 1: A method, comprising:

determining whether each of a plurality of processors in a fault tolerant multiprocessor system is operable;

wherein said determining further comprises determining whether each processor is asserting a stall signal on a system bus: and

selecting a bootstrap processor from among the operable processors irrespective of an initialization time of a particular operable processor.

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Claim 3: The method of claim 1, further comprising:

determining whether all of the operable processors are ready to enter a bootstrap processor arbitration process.

Claim 4: The method of claim 3, wherein determining whether all of the operable processors are ready further comprises:

determining whether each processor has de-asserted the stall signal on the system bus; and

determining whether a request queue indicates a pending transaction for the system bus.

Claim 7: The method of claim 1, wherein determining whether each processor is operable further comprises determining whether each processor has successfully completed an initialization and testing sequence.

Claim 13: A computing system, comprising:

a plurality of processors;

a system bus coupled to each of the processors;

an arbitration protocol to determine a bootstrap processor from the plurality of processors irrespective of an initialization time of a particular processor; and

logic to ensure that a) a stall signal has been de-asserted on the system bus by

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each processor and that b) at least one processor is operable prior to allowing the operable processors to enter a bootstrap processor arbitration process.

Claim 17: The computing system of claim 13, wherein each of the processors has a bus controller, the bus controller to stall transactional activity on the system bus until all operable processors are ready for the bootstrap processor determination.

Claim 18: An apparatus, comprising:

a computer readable media; and

instructions embedded on the computer readable media, the instructions when executed by a machine, cause the machine to perform operations comprising:

determining whether each of a plurality of processors in a fault tolerant multiprocessor system is contributing to assertion of a stall signal on a system bus; and

allowing one or more selected ones of the plurality of processors to enter a bootstrap processor arbitration process responsive to both 1) the stall signal has been de-asserted on the system bus by each of the plurality of processors and 2) the selected processors are operable.

Claim 20: The apparatus of claim 18, wherein de-assertion of the stall signal by a particular processor indicates that the particular processor has completed an Initialization sequence.

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Claim 21: The apparatus of claim 18, wherein the instructions when executed by a machine, further cause the machine to determine that a particular one of the processors is operable if the particular processor has 1) de-asserted the stall signal and 2) indicated successful completion of an initialization sequence.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun Cao whose telephone number is 571-272-3664. The examiner can normally be reached on Monday-Friday from 7:30 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Chun Cao
Mar. 18, 2005